

## REMARKS

Claims 1, 2, 6-11, 14-8, 21-24, 27-31, 34-38, 41-44, 52, and 53 are pending in the present Application. Claims 6-8, 14, 15, 21, 27, 29, 34, 36, and 41-43 have been canceled, and claims 1, 9, 10, 16, 17, 22, 23, 28, 30, 35, 37, 44, 52 and 53 have been amended, leaving Claims 1, 3, 9-11, 16-18, 22-24, 28, 30, 31, 35, 37, 38, 44, 52, and 53 for consideration upon entry of the present Amendment.

Claims 1, 23, 37, and 52 have been amended to change the transitional phrase to “consisting essentially of” and to include a nucleating agent and impact modifier as part of the required components. Additionally these claims have been amended to include the amount of polystyrene resin, indicate that the non-halogenated flame retardant is the only flame retardant, specify the flame retardant amount and types of flame retardant (in a Markush group). Support for these amendments can at least be found in the claims as originally filed as well as in Paragraphs [0030], [0033], [0042], [0043], [0050] as originally filed.

Claims 10, 17, 30, and 53 have been amended to change the transitional phrase to “consisting essentially of” and to include a nucleating agent and impact modifier as part of the required components. Additionally these claims have been amended to include the amount of polystyrene resin. Support for these amendments can at least be found in the claims as originally filed as well as in Paragraphs [0030], [0033], and [0050] as originally filed.

Claims 16, 22, 28, 35, and 44 have been amended to use “consists of” in place of “comprises”.

No new matter has been introduced by these amendments or new claims. Reconsideration and allowance of the claims are respectfully requested in view of the above amendments and the following remarks.

### Claim Rejections Under 35 U.S.C. § 103(a)

Claims 1, 3, 6, 7, 9-11, 14-18, 21-24, 27-28, 30-31, 34-38, 41-42, 44, and 52-53 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Weber in combination with Schmidt, and Henn. Applicants respectfully traverse this rejection.

Claims 8, 29, and 43 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Weber in combination with Schmidt and Henn and further in view of Taubitz, '633 (of record). Applicants respectfully traverse this rejection.

Claims 1, 3, 6, 7, 9-11, 14-18, 21-24, 27-28, 30-31, 34-38, 41-42, 44, and 52-53 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Weber in combination with Schmidt, Henn and further in combination with Green. Applicants respectfully traverse this rejection.

Claims 8, 29, and 43 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Weber in combination with Schmidt and Henn and further in view of Taubitz, '633 (of record), and further in combination with Green. Applicants respectfully traverse this rejection.

Weber is the primary reference and has been cited for its teaching with regard to the composition of an expandable composition. Weber teaches a composition comprising a polystyrene, a poly(arylene ether) and a blowing agent mixture. The composition may further comprise a flame retardant such as phosphine oxide (col. 3, lines 46-49). Weber does not teach several elements of the amended claims. For example, Weber does not teach the non-halogenated flame retardant of independent claims 1, 23, 37, and 52. Weber discloses examples of flame retardants ("flameproofing agents") at col. 3, lines 46-49. These examples include phosphites and phosphines but not phosphates and, more specifically, not the aromatic organic phosphates of the amended claims. Phosphines and phosphites are chemically different from phosphates. The chemical differences translate to different properties so a teaching regarding phosphines and phosphites would not suggest phosphates to one of ordinary skill in the art. Furthermore, Weber does not teach or suggest including an impact modifier in the composition as required by the both the claims to a flame retardant material (independent claims 1, 23, 37, and 52) and the "regular" material (independent claims 10, 17, 30 and 35). Finally, Weber requires the inclusion of an aromatic saturated hydrocarbon as part of the blowing agent. This teaching is in direct contrast to the dependent claims 9, 16, 22, 28, 35, and 44. These dependent claims only allow the use of pentane or pentane isomers as the blowing agent.

Schmidt has been cited for its teaching of flame retardants. Specifically, Schmidt teaches the use of an aromatic thermoplastic polyphosphonate as the flame retardant. Schmidt also teaches that triaryl phosphates can be included in the composition as a plasticizing compound

(col. 6, lines 63-68) but it is important to note that these compounds are being included in amounts appropriate to a plasticizer, not a flame retardant. In fact, Schmidt teaches away from using triaryl phosphates as a flame retardant (see col. 7, lines 50 to 61). Furthermore Schmidt is not directed to an expanded or expandable composition so the insertion of the elements of Schmidt into an expanded or expandable composition is difficult to predict. Finally, Schmidt does not teach or suggest the inclusion of an impact modifier. In summary, Schmidt does not correct the deficiencies of the primary reference, Weber.

Henn discloses expandable polystyrene compositions. Henn has been cited for its disclosure with regard to polystyrene molecular weight. Henn discloses the inclusion of a styrene-soluble elastomer in the expandable polystyrene composition. The fact that the elastomer is soluble is important because Henn discloses making the expandable polystyrene compositions by dissolving the elastomer in the styrene monomer and then polymerizing the styrene monomer. Applicants believe that this is an insufficient teaching to suggest the inclusion of an impact modifier in a poly(arylene ether)-polystyrene blend due to the significant differences in the method of making the compositions and the effect of the method of making the composition on the final composition, particularly with regard to dispersion of the many elements. Finally, it must be noted that Henn is silent with regard to flame retardants and so cannot rectify this deficiency of Weber.

Given the foregoing discussion, Applicants respectfully assert that the combination of Weber, Schmidt and Henn do not support a *prima facie* case of obviousness. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing that all elements of the invention are disclosed in the prior art; that the prior art relied upon, or knowledge generally available in the art at the time of the invention, must provide some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The obviousness inquiry also requires consideration of common knowledge and common sense. *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1742-43 (2007); *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1367 (Fed. Cir. 2006) (“Our suggestion test is in actuality quite flexible and

not only permits, but requires, consideration of common knowledge and common sense.”) The combination of references does not teach all the elements, specifically the flame retardant and the impact modifier. Reconsideration and withdrawal of this rejection are respectfully requested.

Green discloses a method of making expandable polystyrene pellets. Green does not teach or suggest the flame retardants or impact modifier required by the amended claims. As a result, the combination of Weber, Schmidt, Henn and Green do not support a *prima facie* case of obviousness.

Taubitz discloses a molding composition. There are significant differences in the requirements of a molding composition and an expandable/expanded composition which make it difficult to apply the teachings from one area to the other. Additionally, we note that Taubitz discloses the inclusion of several elements which are outside the scope of the pending claims such as the phenol/aldehyde resin which is the key element of the composition (col. 3, lines 49-56). If Taubitz is considered only for its teaching with regard to the flame retardant of the pending claims then it must be remembered that Taubitz is directed to a molding composition and not an expanded or expandable composition. Hence the application of the teachings of Taubitz to Weber, Henn and Green must be considered carefully. This is particularly true since Henn teaches that at least some aromatic organic phosphates are plasticizers and Weber requires the use of a plasticizing blowing agent. One of ordinary skill in the art would not be likely to combine the teachings of these references due at least to the differences in subject matter and the unpredictability of the effect of two different plasticizers on the distribution of components throughout the material, migration in the formed material and on expansion of the material. It appears that the combination of references (Weber, Henn, Schmidt and Taubitz) requires a great deal of hindsight gained from the pending application. Even with hindsight, a significant amount of selection must be performed which ignores the totality of the references. Applicants believe that the combination of Weber, Henn, Schmidt and Taubitz cannot be used for a *prima facie* case of obviousness. Allowance of the claims is requested.

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and withdrawal of the objection(s) and rejection(s) and allowance of the case are respectfully requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 50-1131.

Respectfully submitted,

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